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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,893	01/22/2007	Peter Asberg	1505-1103	4738
466	7590	10/20/2009		
YOUNG & THOMPSON 209 Madison Street Suite 500 Alexandria, VA 22314			EXAMINER YANG, NELSON C	
			ART UNIT 1641	PAPER NUMBER
			MAIL DATE 10/20/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/593,893		ASBERG ET AL.	
	Examiner		Art Unit	
	Nelson Yang		1641	

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/4/2009</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendment of claims 39, 47, 48, and addition of claims 49-55 is acknowledged and has been entered.
2. Claims 39-55 are currently pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 39-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitten et al [US 2002/0051985] in view of Wohlstadter et al. [US 2001/0021534].

With respect to claims 39, 44, 52, Whitten et al. teach a polymer-QTL molecule comprising a fluorescent polymer, a chemical moiety QTL comprising a recognition element such as a ligand which binds to a target biological agent, and a property altering element which alters fluorescence emitted by the fluorescent polymer, wherein the polymer-QTL complex may be covalently or non-covalently bound on a surface, bead, or other support by covalent or non-covalent linkages (para. 0021, 0083). Whitten et al. fail to teach that the support is a patterned substrate having hydrophilic and hydrophobic areas.

Wohlstadter et al., however, teach a multispecific binding surface comprising binding domains that are hydrophobic or hydrophilic and the surrounding surfaces having the opposite

Art Unit: 1641

property than the binding domains in order to minimize spreading of binding reagents or analytes from the binding domains (para. 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the support of Jones et al. to comprise patterned hydrophilic and hydrophobic regions, wherein the fluorescent polymers and reporters are tethered to selected areas, as suggested by Wohlstadter et al., as this would minimize spreading of binding reagents or analytes, allowing for more accurate assay results.

5. With respect to claims 40-41, 53, Whitten et al. teach a fluorescent polymer such as a water soluble polyelectrolyte such as 2 methoxy-5-(3-sulfonato-propyloxy)-polyphenylene (para. 0021, 0040).

6. With respect to claims 42, 55, Whitten et al. teach a polymer-QTL molecule comprising a fluorescent polymer and a chemical moiety QTL comprising a recognition element which binds to a target biological agent, and a property altering element which alters fluorescence emitted by the fluorescent polymer (para. 0021).

7. With respect to claim 43, Whitten et al. teach supports comprising glass slides (para. 0087).

8. With respect to claims 45-46, Whitten et al. teach ligands comprising nucleic acids and antibodies which would bind to analytes such as nucleic acids and antigens (para. 0046).

9. With respect to claims 47-48, Whitten et al. teach a chamber and further teach that the polymer-QTL molecule complex may be used in flow formats and also teach detectors (para. 0076-0078, 0085, 0103, 107).

Art Unit: 1641

10. With respect to claim 49, Whitten et al. teach immobilization of the fluorescent polymers by ionic adsorption, which involves electrostatic interactions (para. 0081).
11. With respect to claims 50, 54, Whitten et al. teach fluorescent polyelectrolytes comprising at least 5 mers (para. 0055, para. 0063-0065, p. 5, tables 1, 2, wherein polymers comprise 904 polymer repeat units).
12. With respect to claim 51, Wohlstadter et al. teach that the binding domains may be arranged in lines or spots (para. 00153, 00170)

Double Patenting

13. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

14. Claims 39, 40, 44, 47-48, are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-22 of copending

Application No. 10/514,191 [US 2006/0175193] in view of Wohlstadter et al. [US 2001/0021534]. In particular, the copending application recites a complex comprising a conjugated polyelectrolyte and one or more receptor molecules specific for a target biomolecule analyte immobilized on the surface of a receptacle such as a flow cell wherein the conjugated polyelectrolyte may be confined or adsorbed to the support (claims 1, 6, 13-15). The copending application fails to recite the limitation the surface is a patterned substrate having hydrophobic and hydrophilic areas.

Wohlstadter et al., however, teach a multispecific binding surface comprising binding domains that are hydrophobic or hydrophilic and the surrounding surfaces having the opposite property than the binding domains in order to minimize spreading of binding reagents or analytes from the binding domains (para. 0039).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention for the support of copending application to comprise patterned hydrophilic and hydrophobic regions, wherein the fluorescent polymers and reporters are tethered to selected areas, as suggested by Wohlstadter et al., as this would minimize spreading of binding reagents or analytes, allowing for more accurate assay results.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

15. Applicant's arguments with respect to claims 39-55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Art Unit: 1641

16. No claims are allowed.

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nelson Yang whose telephone number is (571)272-0826. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on (571)272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1641

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nelson Yang/
Primary Examiner, Art Unit 1641